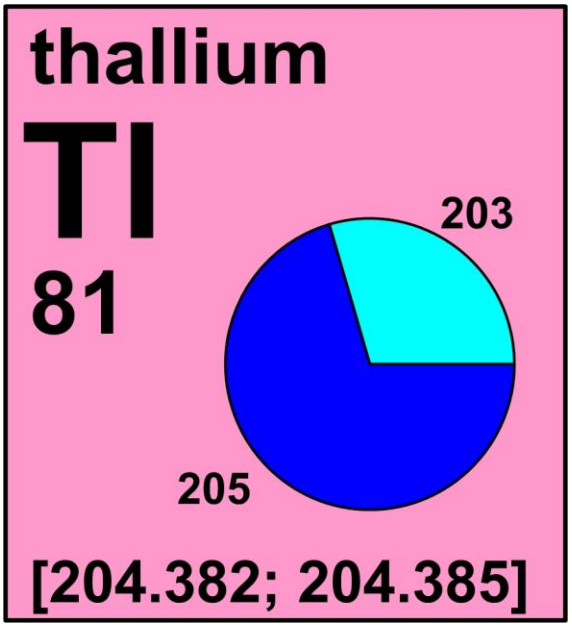
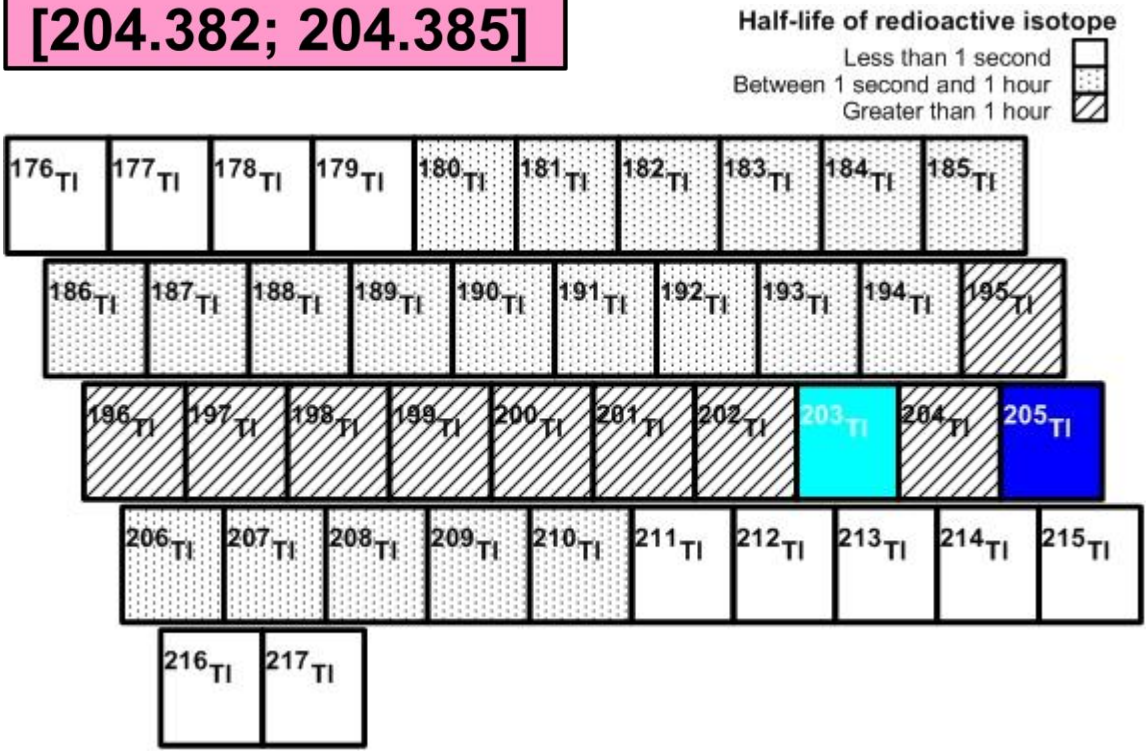
thallium



Stable isotope	Atomic mass*	Mole fraction
^{203}Tl	202.972 3442	0.295 24
^{205}Tl	204.974 4275	0.704 76

* Atomic mass given in unified atomic mass units, u.



Important applications of stable and/or radioactive isotopes

Isotopes in medicine

1. ^{201}Tl (half-life 73 hrs), decays by electron capture, emitting Hg X-rays (~70–80 keV), and photons of 135 and 167 keV in 10% total abundance; therefore it has good imaging characteristics without excessive patient radiation dose.

2. Before the widespread application of ^{99m}technetium in nuclear medicine, the radioactive isotope ^{201}Tl with a half-life of 73 hours was the main substance for nuclear diagnostic.
3. ^{201}Tl is still used for stress tests for risk stratification in patients with coronary artery disease A(CAD). It is the most popular isotope used for thallium nuclear cardiac stress tests.
4. ^{201}Tl is used extensively for imaging and in particular for perfusion tests of the myocardium. These tests are done to determine the damage to the heart from a heart attack or from heart diseases.
5. ^{205}Tl has been proposed as an alternative target for the production of ^{201}Tl.
6. ^{205}Tl is also used in nuclear magnetic resonance research

**Applications of thallium isotopes are still being researched and this page will be updated shortly. **